JPRS 84626

27 October 1983

West Europe Report

SCIENCE AND TECHNOLOGY

No. 161

FBIS FOREIGN BROADCAST INFORMATION SERVICE

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

JPRS 84626

27 October 1983

WEST EUROPE REPORT

SCIENCE AND TECHNOLOGY

No. 161

CONTENTS

SCIENCE POLICY

TRANSPORTATION

ELECTRONICS

FRG ERICSSON SUBSIDIARY INCREASES 1982 PROFITS

Leinfelden-Echterdingen DIE COMPUTER ZEITUNG in German 23 Mar 83 p 2

[Article: "Almost a 'Splendid' Third More Profit"]

> [Text] Duesseldorf (ke)--The expansive German subsidiary of the Swedish telecommunications and information systems group Ericsson, of Ericsson Information Systems GmbH in Duesseldor, reports brilliant results again for 1982. Sales of screen terminals and computer systems rose 38 percent to DM 62 million and profits climbed 31 percent to DM 3.4 million. Along with Ericsson Centrum GmbH in Hannover and Facit GmbH in Duesseldorf, a sales total of DM 112 million with a profit of DM 6.3 million was realized in 1982. With new products, intensified activity and a rounding off of the group through the purchase of more companies, Ericsson should reach its 1983 sales goal of DM 200 million.

As manager Magnus Falk told journalists in Munich, the group management of the three Ericsson enterprises is making good progress. By the end of the year at the latest, sooner than planned, the three enterprises are to merge under the common roof of Ericsson Information Systems GmbH and, above all, to reorganize distribution.

The purpose of the operation is to combine and integrate data processing, information technology and office technology in order to automate office procedures. In order to reach the sales goal for 1985--DM 500 million--the new structure is not sufficient by itself. New products are not, after all, growth machines.

For the first time Ericsson is getting into the West German telephone business on a massive scale with electronic extension equipment. With its ASB Series and MD 110 Series equipment the company wants to claim 3 to 5 percent of the approximately billion-mark extension market within 3 years.

The MD 100 digital exchange system--which, intended for office communications, can transmit figures, text and pictures in addition to speech--plays a special role in this effort.

The new Ericsson Series 2000 computer system should also make more communication possible in the area of data processing. The system, which has a modular structure, was designed with a view to data processing in separate locations.

Here in the Federal Republic the company is already represented by well over 10,000 screen terminals of the Alfaskop type.

And, thanks to its extensive software, the System 2000--improved successor to the proven D 16 Series--is suited for use as a stand-alone system.

In addition, the product package will be expanded immediately to include the so-called Eripax packet exchange system for the exchange and transmission of data as well as the Erimail electronic mail system. From what has until now been Facit's territory the DTC-S personal computer will be offered with expanded capacities and applications.

The group's product package is rounded out by business data recording systems, data sets, personal location devices, time recording instruments, teletex systems, electronic type-writers and computer peripheral devices.

12344
CSO: 3698/447

ELECTRONICS

ERICSSON HAS 'EUROPE'S MOST MODERN' PRINTED CIRCUIT CARD FACTORY

Stockholm NY TEKNIK in Swedish 25 Aug 83 p 18

[Article by Jorgen Ulvsgard]

[Text] Norrkoping--From design to manufacture using on-line computers.

That is the Ericsson Group's latest weapon in international competition among printed circuit card manufacturers.

The new computer system has been quietly installed in the Norrkoping factories.

The result has been increased production and improved quality.

Europe's largest and most modern factory for the production of circuit boards is located out on the Norrkoping plain.

The factory produces between 3 million and 4 million electronic cards every year for telephones and telephone exchanges.

Computer-controlled machines in the factory stamp out glass fiber boards that provide the base for the printed circuit cards. The cards can be as big as a chessboard or as small as a lump of sugar. Circuit designs are built into all the boards.

The board constitutes the base on which thin copper wire is soldered, coils are wound, and transistor chips and resistors are mounted and inspected.

The circuit board then becomes a printed circuit card.

Controlled From Stockholm

Sitting in an office in Stockholm is a design engineer who controls and programs the machines in the factory directly--without any human intermediary.

It is with this computerized design work that the Ericsson Group is maintaining its leading position in the world in the field of telecommunications electronics.

It can now produce a larger quantity of printed circuit cards of higher quality with a lower fault rate than before. There is also greater flexibility in handling customer orders.

It was several years ago that Ericsson began experimenting with efforts to combine the two computer functions known as CAD [computer-aided design] and CAM [computer-aided manufacturing] so as to make them communicate with each other.

CAD was being used to help design engineers calculate suitable circuit designs for the placement of resistors and capacitors.

CAM was being used to program the machines during production out in the factory.

The revolutionary result was the interlinking of the two functions.

Today a design engineer can reprogram a factory machine for a new order and change an order without any paperwork (punched computer tape) or effort by the operator in the factory.

Every step from design to manufacture is handled using computers.

Factory manager Per G. Malmborg says: "We save loads of time. It used to take as long as a week to change an order. Now it is done in a few hours.

"We have greater flexibility, and the time required between receiving an order and delivering the product to the customer is shorter.

"The printed circuit cards are also cheaper to produce. We save millions of kronor in paperwork alone. The full cost of the new computer system will be recovered in 1.5 years."

The CAD-CAM function is also used for keeping track of work on hand and for preparing packing lists and shipping orders. A job number tells when an order begins and ends in the production chain.

The Ericsson Group is the first in the country to introduce this computer function on a large industrial scale, and even foreign factories are involved. Design work using computers was previously performed only on a small scale and in small shop production.

Now there are direct lines to Spain and Ireland, and the intention is to add others.

A design engineer in Stockholm can change the program in a machine in Spain in an hour or so.

Threat From Sheikh

One example of how the CAD-CAM function can operate under real conditions is shown by an order received at the Norrkoping factory from a sheikh in Saudi Arabia.

It concerned a telephone exchange to be installed for the sheikh. The job was in full swing when he inquired about a special function that the telephone exchange lacked. If the order could not be filled, he threatened, he would break the contract.

A design engineer sat down at his drawing board, sent his new order out to the main computer and on through the local computer in the factory to the machines.

Production of the circuit board stopped, the machines were reprogrammed, and just a few hours later, the new electronic components were on a plane to Saudi Arabia.

The CAD-CAM functions handle 90 percent of all design work to within half a module level--that is, a space of 1.27 millimeters on a printed circuit card. At that point, the human brain has to take over.

Few Personnel

The new computer system requires little manpower.

The new facility for fully computerized circuit board manufacturing will employ only 25 people in its first phase.

By way of comparison, it can be noted that equivalent production today employs between 75 and 100 people.

Per G. Malmborg says: "Despite the low manpower level, our production is rising by 40 percent.

"No one will be fired. Personnel are needed to improve quality through more reliable inspection of the components and printed circuit cards."

Under this new production system, the cards will not have to be touched by human hands.

"We will have fewer defects now, and that is not unimportant. A faulty resistor can cause millions in losses if it is discovered at a late stage in the process."

But manual handling for complicated assembly and coil winding will continue to be necessary in the future.

After all, computers have their limits.

PHOTO CAPTION

1. p 18. The Ericsson Group has taken a stride forward in competition in the field of telecommunications electronics by successfully interlinking two computer functions: CAD and CAM. Design engineers in Stockholm can now control the design and production of printed circuit cards in factories in Sweden and abroad with no human intermediaries. The operators are no longer needed. The paperwork disappears.

11798
CSO: 3698/444

SIEMENS DEVELOPS INTEGRATED SOFTWARE PACKAGE FOR MANAGEMENT

Leinfelden-Echterdingen DIE COMPUTER ZEITUNG in German 23 Mar 83 p 26

[Article: "Software From a Font"]

> [Text] In the new "IS" (integrated user software) program package Siemens has compiled modular standard programs for all of a firm's industrial-economic tasks--production, distribution, procurement, bookkeeping and personnel. The new software runs on the 7500 Series computers in the BS 2000 business system.

The salient characteristic of integrated user software (IS) is the strict separation of business programs from the computer-technical area. This makes the user independent of hardware and business-system changes and thereby lengthens the useful period of the programs. In addition basic data have to be recorded only once, since it can be fed into a common data base. This means equal up-to-dateness and availability of the data for all departments working with the IS.

The individual program building blocks can be built up in stages and used both autonomously and in an integrated manner. In addition the IS offers additional service functions with the aid of which the standard programs can be adapted to the user's particular needs. And because the IS was designed as an "open" system, the user can even bring his own program building blocks into the IS and work with them under the same user cover.

The additional service functions and all other computer-technical functions drawn from the business programs are combined in the IS-AMOR user software monitor. The monitor handles, for example, user guidance, the preparation of dialog messages, the coordination of data handles, user-adaption ("customizing") with regard to function expirations, screen masks, etc. The user can also utilize these functions by means of his own supplemental COBOL programming inserts. This allows considerable savings in the development and servicing of all programs, both standard and customer-generated.

12344
CSO: 3698/447

ELECTRONICS

SIEMENS DEVELOPS SOFTWARE FOR PLANT SERVICE, MAINTENANCE

Frankfurt/Main FRANKFURTER ZEITUNG/BLICK DURCH DIE WIRTSCHAFT in German
7 Sep 83 p 5

[Article: "Planned Maintenance Reduces Expenses. Siemens: Equipment Lifespan Also Increased"]

[Text] Siemens AG, Munich/Berlin--In Siemen's opinion the maintenance technician is a sought-after colleague in today's modern production plants with their many complicated machines and equipment. Thus, for example, in an oil refinery two-thirds of the workers are maintenance personnel and only one-third engage in actual production. With its new GMP (general plant maintenance) software product Siemens wants to show how servicing and maintenance can be carried out more systematically and thus more efficiently.

The new software is a branch-neutral program package for the planning and supervision of "planned maintenance." This concept includes servicing, inspection and planned repair. In addition, GMP keeps track of the expenditures and costs of all plant maintenance measures--thus planned maintenance, unplanned repair, replacement, rebuilding and alteration, removal or special applications. The program runs on all computers of the 7.500 (from 7.531) and 7.700 systems in the BS 2000 business system, Siemens says.

The maintenance software is to be used in all of the larger company units with plants, factories and in-house management staff in finance, research and management. Siemens considers that a reasonable starting threshold for the system would be enterprises with approximately 500 employees or DM 100 million yearly sales with at least 30 maintenance workers.

For some time Siemens claims to have been using this software product in its own firm, even in middle-size production plants with 2,000 to 3,000 workers. This experience has shown that immediate demands on the maintenance personnel which are unplanable and thus obstructive decreased from 60 percent to only 10 percent. Demand volumes which are planable and technically clarifiable before work begins increased strongly and peak workloads decreased, Siemens reports.

Overall maintenance costs decreased by about 15 percent with a simultaneous increase in the lifespan of the equipment. Wages paid unnecessarily to

machine service personnel because of unplanned production stoppages decreased proportionally by about 1.5 percent--DM 150,000 per DM 10 million total wages yearly. On the basis of the current use of the system the GPM software and hardware should pay for itself in 2 to 3 years.

12344
CSO: 3698/447

BRIEFS

PHILIPS' CAR COMPACT DISC--The sound revolution is about to enter the automobile industry: Philips, the inventor of the compact disc jointly with Sony, has just developed a laser reading unit that can be used in a vehicle, according to the Dutch group. The product is not yet manufactured industrially and is not expected to be marketed before 1985. Philips believes that the compact disc is "bound to" replace car cassette readers, i.e. it will have a potentially "huge" market. [Text] [Paris AFP SCIENCES in French 22 Sep 83 p 23] 9294

PHILIPS' COMPUTERIZED FILING SYSTEM--Philips has just introduced the first fully computerized large-capacity document filing and retrieval system; according to the group, this system is intended especially for administrations, insurance companies and large enterprises. The system, called MEGADOC, uses numeric optical discs to store up to 10 million pages, the equivalent of 300 meters of 2.8-meter high filing cabinets with a convention paper filing system. The system uses keyword coding, and any document can be retrieved and reproduced in one second. The computer can be accessed by 12 people at a time, and it can also store pictures. The data stored cannot be erased and will remain legible for at least 10 years. Philips hopes to sell about 10 such systems for 2 to 8 million francs each, depending on the configuration. A numeric disc costs 4,000 francs, but the price might go down to 1,000 within the next 3 years. [Text] [Paris AFP SCIENCES in French 22 Sep 83 pp 23-24] 9294

CSO: 3698/22

NUMBER, KIND OF INDUSTRIAL ROBOTS IN FRG IN 1982

Bern TECHNISCHE RUNDSCHAU in German 29 Mar 83 p 13

[Article by Dr-engineer Rolf D. Schraft, Fraunhofer Institute for Production Technology and Automation, Stuttgart: "Industrial Robots Are Succeeding"]

[Text] After a slow start in the first half of the 1970s, industrial robots have begun to succeed in the second half. This is due to improved robot technology and to broader application and user know-how. The number of industrial robots in use in numerous areas has experienced a sudden, sharp increase. Examples are spot and path welding and machine loading and unloading. Numbers are running far below expectations in areas like assembly and processing--cleaning and deflashing castings, for example. The numbers of robots employed in specific jobs in the FRG in December 1982 were as follows:

--Spot welding	1,331
--Path welding	585
--Machine loading and unloading	520
--Assembly	122
--Manufacturing processing	20

The strongest growth was registered in spot welding (in December 1980, 320 units; in December 1981, 700 units). In general it is expected that this strong growth, which is due primarily to new installations in the automotive industry, can last for only a few years. After that, new units will be used mainly as replacements. The situation is different for path welding; many factories in various branches of industry are considered to be potential customers. It is not anticipated that large numbers of the same type of equipment will be sold to a few manufacturers: instead, a large number of tailored systems will be required. This market is believed to be in its infancy. This is especially true for manufacturing processing wherein industrial robots are used for jobs such as cleaning and deflashing castings. Here, technological problems associated with industrial robots remain largely unsolved and there are still almost no systems on the market which are able to react to sensor information about varying parts geometry and allowable tolerances--amount fo flashing, clamping tolerance, etc.

In December 1982, only 122 industrial robots were used in assembly operations. This area is seen as one of great potential as soon as parts start being designed for ease of assembly. Thus a sizable increase in the application of assembly robots is not expected before the second half of the 1980s.
9160
CSO: 3698/443

ASEA, LULEA TECHNICAL COLLEGE MAKE HEARING, SEEING ROBOT

Stockholm NY TEKNIK in Swedish 24 Mar 83 pp 18-19

[Article by Larry Havbring and Lars Pekka]

[Text] Lulea--The Lulea Technical College is developing advanced know-how in industrial technology in cooperation with the industrial firms in Norrbotten. The work involves the development of robots and computers for the engineering industry, and in the long run, it may provide new jobs for Norrbotten.

Here are a few examples:

1. ASEA [Swedish General Electric Corporation] is establishing a research and development department for industrial robots in Lulea.

2. Ericsson Corporation is establishing a research and development department for software in Lulea.

3. Elenorr, an electronics firm in Gammelstad outside Lulea, is receiving the prototype of a "hearing" picking robot that was developed at the school's Data Processing Branch (see below).

4. Saab-Scania in Lulea uses the school's technology students for advanced development projects concerned with working environment technology.

In other words, there is no doubt that the Industrial Electronics Department was a decisive factor in the decision by both ASEA and Ericsson to establish research and development departments in Lulea. ASEA is very interested in the "seeing" robot that the students have developed (see below).

Hakan Brantmark of ASEA's Robot Division in Vasteras recently visited the school and was highly impressed with the work done by the technology students.

He told them: "I would like to see you apply for a job with us."

Osten Kajsajuntti of Saab-Scania in Lulea told NY TEKNIK:

"We have benefited greatly from the school's Data Processing Branch. The technology students always work for us in groups. At the moment, one group is

working on a method for blowing away dripping paint during immersion painting. We are always surprised at the advanced work they do."

Osten Kajsajuntti says: "We will probably also be delighted with the robot control systems--one optical and one acoustical--that they are working on."

Instructor Kalevi Hyypa says: "It has always been our goal to provide a shot in the arm for industry in Norrbotten and Sweden."

Robots That See and Hear

Lulea--A picking robot that uses ultrasonics to "hear" its way toward the workpiece that it is to pick from a pallet.

A robot that can perform precise operations (welding, among other things) on a constantly moving support (a production line, for example).

Those are two examples of entirely new paths in industrial electronics along which technology students in the Lulea Technical College's Data Processing Branch have been feeling their way.

Data processing instructor Kalevi Hyypa says: "As far as I know, there are no other picking robots that can use acoustical signals to select workpieces from a pallet."

The problem was to find a suitable ultrasonic transmitter.

Ultrasonic

The technology students came across a new kind of ultrasonic transmitter that is found in new Polaroid cameras.

They attached it to the picking magnet in the robot's movable turret. An acoustical impulse is sent out from the transmitter, which also acts as a receiver of the sound impulse that bounces back from the object.

Echo Sounder

Then the magnet is guided toward the highest object on the pallet--that is, the workpiece lying on top.

The principle is basically simple--it operates like an echo sounder.

Student Ingemar Fredriksson explains: "This means that the object does not have to be in a preestablished spot in order for the robot to pick it up."

Moving Support

A group of technology students has been trying to "teach" a robot to perform precise operations on workpieces being carried on a moving support.

That is a big development project, and so far they have succeeded in getting the robot to draw a straight diagonal line on a belt moving at varying speeds.

Kalevi Hyypa says: "The fact that a robot can work directly on a moving production line may be of great importance for the future."

New Computer Language

Other projects on which the technology students have been working include the development of a new computer language and a "seeing" robot which, using a TV camera, can pick out an object with great accuracy and determine its center of gravity so that the robot can grasp it in exactly the right way. This last-mentioned type of development project is also underway elsewhere in Sweden.

PHOTO CAPTIONS

1. p 19. This is the seeing robot that technology students in Lulea have come up with. It is able to identify an object, find its way to it with the help of a TV camera, and lift it.

2. p 19. The seeing robot is also being developed to be able to perform complicated tasks on a support moving at varying speeds.

3. p 19. Here is the secret behind the seeing robot: a photodiode matrix containing 16,384 picture elements, each of which supplies special information to the system's buffer storage.

11798
CSO: 3698/444

NC FOLDING MACHINE MAKES COMPOSITE PLASTIC FOR AIRBUS SPOILER

Munich-Ottobrunn MBB AKTUELL in German Jan 83 p 5

[Article: "Greater Rationalization Effects in Bonding"]

> [Text] Einswarden (wa). The tedious hand work with which the graphite-fiber tapes used in manufacturing Airbus spoilers had to be laid up and cut in the bonding department at the Einswarden plant is at an end. A numerically controlled tape laying machine has taken over this hard work. The automat which lays the graphite-fiber composite (CFK) tapes for the spoilers of the A310 and the A300-600 works with high speed and accuracy. It requires much less time than the manual process and works with an accuracy of better than a tenth of a millimeter.

The tape-laying machine weighing tons was installed in an air conditioned building at the Einswarden plant on a foundation supported by pilings. Just the head itself with the tape-laying unit weighs 1.5 tons. It works on a surface of 4 x 4 meters; the working surface can be increased to 4 x 10 meters.

The tapes are graphite-fiber composites with unidirectional fibers. The machine builds up the laminated structure--somewhat like plywood--a layer at a time with one layer at 90, another at 0, next - 45 then + 45 degrees. Thus, fibers are arrayed in all load carrying directions of the spoiler.

Graphite fiber is a carbonized nylon material which is as light as a feather and looks like very fine hair. These hairs, aligned, are embedded in a resin which is referred to as the matrix. Graphite fibers have the unusual property of shrinking when heated. This peculiar property is largely offset by the positive property of the resin--expansion with heating. Both together have a thermal coefficient of expansion of zero. Thus, graphite-fiber parts maintain their shape at all temperatures.

The laminated material fabricated by the tape-laying machine is earmarked for the production of 6 spoilers for each A310 and 10 spoilers for each A300-600.

The high accuracy with which the bonding department at Einswarden has to work shows up also in the material selection for the tools in which the mechanically-layed up tapes will be cured and bonded to the honeycomb cores.

The tools are made of the same material--a special steel alloy--as the standard-meter bar in Paris. The tape layups are cured into a composite material in an autoclave. The shell structure (approximately 1-mm thick) produced from the graphite tapes corresponds to the skin of a conventional metallic spoiler. For equal stiffness, the graphite-fiber composite skin is significantly lighter than the metal skin. A honeycomb core is milled to the shape required to exactly fit into the spoiler shell made from the graphite tapes; the two parts are then bonded together. To this structure are added fittings for attaching the spoiler to the wing and fittings for attaching the actuator cylinder to the spoiler. After final assembly, a wing and its spoilers form a kinematically coupled aerodynamic entity.

The spoilers are made in forms and tools which are built to an accuracy of a fraction of a millimeter. They guarantee the close tolerances required for the spoilers and assure the reproducibility of these tolerances. During manufacturing the graphite-composite components are continuously inspected for quality. Before the finished graphite spoilers are installed on the wings of the A310 and A300-600 in the Bremen factory, a final inspection of the material will be made at Einswarden. The spoiler structure will be examined one square millimeter at a time with ultrasonic and x-ray equipment for possible production flaws.

9160
CSO: 3698/429

BRIEFS

FRG MATERIALS HANDLING INDUSTRY--In order to stay competitive, industry has to produce more and more complex high-quality products in varying lot sizes and designs at acceptable prices. In relation to this, assembly methods, material handling techniques and industrial robots are becoming of increasing importance. The synthesis of electronics and mechanics has generated new types of manufacturing media which offer the user previously unavailable rationalization possibilities and which open up for the manufacturers markets with relatively high growth rates. In October 1981, German manufacturers in the areas of assembly, material handling and industrial robots joined together in a professional society of like name [MHI: Assembly, Material Handling and Industrial Robots] under the VDMA [Society of German Machine and Facilities Builders, Inc] umbrella. Together under the MHI name, they will put to the test the effectiveness of this branch in offering modern manufacturing technologies for the flexibly automated factory. In the FRG there are approximately 80 manufacturers with about 14,500 employees which deal exclusively in the MHI area or have product lines clearly related thereto. In 1982 they sold products worth DM 1,800 million and therewith registered a growth of 16 percent; a growth of 19 percent is anticipated for 1983. Dr-engineer Gerhard Widl, chairman of the Professional Society of Assembly, Material Handling and Industrial Robots (MHI), a subsidiary of the Society of German Machine and Facilities Builders, Inc, (VDMA), Frankfurt. [Bern TECHNISCHE RUNDSCHAU in German 29 Mar 83 p 11] 9160

CSO: 3698/443

MAUROY ON ROLE OF UNIVERSITIES IN R&D, STATUS OF SCIENTISTS

Paris AFT SCIENCES in French 15 Sep 83 pp 1-3

[Article: "The Policies and Organization of Scientific Research"]

[Test] EVRY--Mr Mauroy: Scientific Development and Technology, "A National Priority"--Mr Pierre Mauroy reaffirmed at Evry on 12 September before the directors of the big research institutions the resolve of the government "to make of the scientific and technical development a national priority," since it is "one of the ways out of the crisis."

To reinforce his statement the prime minister announced on the same occasion that, "in spite of the general economic situation known to you all," the money earmarked for research in 1984 "was going to increase by 15.5 percent in value, that is by 8.1 percent in real terms" representing 2.1 percent of the gross domestic product. "Such a figure, he underlined, clearly shows that the priority given to research is not just words, but a reality."

Although in the whole of the public services "every new job created in one sector will have to be compensated for by a job cut in another" research will benefit from a privileged status as "910 new jobs will be created next year nonetheless."

Appeal for the Mobilization of Scientists and Industrialists

Mr Mauroy launched an appeal for the "mobilization of the whole community of academics, scientists, engineers, technicians which," he said, "must still grow. Laboratories must pursue new avenues of research. Every scientist has the duty to be aware of the economic and social impact of his work and must strive for the upgrading of its value."

But, "of course, this mobilization must also involve the industrialists." "To utilize the possibilities offered by new technologies is for them a vital necessity. Only thus will they meet competition and bring their means of production up to date."

The government is resolved to help them by according priority to industrial research and by the creation of grants by ANVAR [National Agency for the Development of Research] and by the Industrial Modernization Fund whose assets will increase from Fr 3 to 5 billion next year.

"However," added Mr Mauroy, "it is obvious that the decision to innovate belongs entirely to the leaders of business, but,"he reminded them "to innovate also means preparing for the long-term future."

The contribution of French business to the financing of research--42 percent--is still too small, stressed Mr Mauroy, compared to that of Japan (60 percent) and the United States (50 percent).

"It is therefore imperative that French enterprises upgrade the resources dedicated to preparation for their future. A joint effort of state and business must allow France to devote a larger part of the national wealth to technological research and development."

Technological exchange should not remain a wish, be it on the national or regional level, added Mr Mauroy. "Industrialists and scientists must multiply contacts in order to fulfill their respective goals. Laboratories and businesses must communicate and join efforts on common projects."

The Position of Universities and of Higher Education

"In view of the scientific and technical potential represented by the universities, which should be developed and put to work on pursuits of economic and social importance, it is essential that the universities participate in this trend, since they train the technicians and scientists that France will need tomorrow."

In this respect, Mr Mauroy publicly gave good marks to the University of Paris-Sud which, he said, through the contacts it managed to establish with a great number of industrial businesses and laboratories "appears as a model of what an institution of higher education can bring to the national research effort as well as to local and regional development."

The head of the government also expressed satisfaction with the initiatives taken by CNRS [National Scientific Research Center], ONERA [National Office for Aerospace Studies and Research] and several industrial participants who recently produced "MIDI-ROBOTS." Recalling the example given by ATNE [Application of Electronic Techniques] Society founded by a former member of CEA [Atomic Energy Commission] which he had visited after the CNRS laboratories (LAL, LURE and the Center for Molecular Genetics) Mr Mauroy emphasized that "CEA, like other national research agencies, constitutes a technological breeding ground that the government means to put at the service of the nation."

The Charter of the Scientist To Be Published "By the End of the Year."

Several hundred researchers and ITA [Institute of Agricultural Technology] had assembled on the campus of the LAL, the LURE and the Center for Molecular Genetics under banners of their unions proclaiming: "Let us negotiate a fair professional charter" "No bargain charter."

The prime minister had agreed to receive delegations or their proposals. He has been anxious to deal in his speech with the problem of the scientists'

charter whose importance has been stressed each time by the directors of institutions or laboratories. Here is the text of his speech:

"In accordance with legal directives the new charter envisages the integration of scientists, technicians and administrative personnel in public services.

"This decision, awaited by unions and all research personnel, is important. It will insure job stability and career development. It will facilitate the mobility and the transfer of researchers to the outside, notably to industry.

"This integration, however, could not be achieved while disregarding the organization, the regulations and the salary scales of the public services. It would have been unfair if, for equal work, the new charter would grant career advantages superior to those of public servants with the same qualifications.

"Conversely, it was necessary to take into account, as far as possible, the characteristics inherent in the research professions. Therefore, we insisted that appropriate exceptions be provided.

"Finally, it was essential that the scientists' charter should harmonize with those being prepared for high school teachers. I therefore asked the minister for national education and research to take care that this harmonization will be assured.

"It is in fact desirable that greater mobility should develop in the future between the teaching profession and the research corps.

"As it is, it seems to me that the proposals submitted to the unions are just and equitable. They constitute a solid basis to insure the management of careers for research personnel.

"Of course, the minister for industry and research will take note of any suggestions submitted to him, within the limits of the constraints and means imposed on him. I wish all the same that matters should move swiftly now. It appears to me in fact indispensable that the complete text of the regulations dealing with the charter for research personnel be published before the end of the year."

8696
CSO: 3698/10

MAUROY ANNOUNCES PRIORITIES OF ELECTRONICS SECTOR

Paris AFP SICENCES in French 22 Sep 83 pp 8-9

[Article: "Six Priorities for the French Electronics Sector"]

[Text] On 19 September in Paris, on the occasion of the opening of the Ninth World Data-Processing Congress, Mr Pierre Mauroy announced that the government had six priorities as far as new technologies were concerned:

These are:

- computer design of high-scale integration electronic components;
- computer-aided design;
- software engineering;
- computer-aided translation;
- new display technologies;
- production of a scientific and industrial minicomputer.

These programs will call on manufacturers, researchers and academics to develop prototypes, new products or new systems, and will require one billion francs in investments over the next four years, the prime minister stated. Financing will be provided by the government and by the manufacturers involved.

To meet the industrial challenge and make the most of this technological mutation, the prime minister stressed again the need for international cooperation, both scientific and financial.

"We must combine our efforts and, together, prepare the technological and industrial future of Europe," the minister emphasized.

Mr Pierre Mauroy pointed out that "above all things" the government must encourage private initiatives in the field of future technologies. The government's efforts must be more effective but, he added, "this must not result in a more rigid and meddlesome supervision of the industry by the administration."

As for Mr Amadou M'Bow, general director of UNESCO, he announced that he would propose the creation of an intergovernmental data-processing program to promote international cooperation.

Data processing, he stated, "is neither good nor evil. It will be what men make it. This technology will be in the service of all if it is in the hands of everyone."

MBB, DORNIER, MTU 1982 RESULTS, FUTURE PLANS

Stuttgart FLUG REVUE in German Sep 1983 pp 30, 32

[Article: "Planning Future Gains"]

[Text] The balance sheets of the three largest German air and spacecraft companies were judged satisfactory last year. New programs should give an additional boost.

At year's end the largest German aerospace company, MBB, stood silhouetted against the background of change at the top and the associated interdepartmental reorganization. Hanns Arnt Vogels, in office since February, did not go into the complex figures of the 1982 balance. Of more importance were the reorganizations:

--Consolidation of the equipment branch with the marine and special methods branches under the direction of Guenther Khulo and the consolidation of the aircraft, helicopter and transportation branches under the directorship of Dr Carl Peter Fichtmueller.

--Both department heads and the department director of Astronautics/ERNO of Astronautical Engineering GmbH, Dr Othmar Heise, have been promoted to business managers effective September 1.

--The central development and central manufacturing areas have been assigned to the vice presidents of business management under the name of technology.

--Gero Madelung, ex-MBB chief, and Max Dronsek of course requested dissolution of their contracts at year's end; both will stay on as consultants.

The reorganization to date, according to Vogels, has been guided by the theme "we call synergism: to make a gain from combining like and similar things."

A cause for the steps taken in the firm was the balance sheet for 1982 and developments in the first half of 1983. In comparison to the sales growth of 18 percent to DM 5,678 million in 1982, a regression of overall and individual performance of about 2 percent was booked in the first half of 1983. The year's profit of DM 60.1 million was in the same order of magnitude as for

the previous year. "For the current year," according to Vogels, "a significant drop in profit has to be expected in view of cancellations in the Airbus program."

In the military sector the company is speculating on the contract for the fighter of the 1990s; however, all important decisions related to this program are still outstanding. For this reason, the managers in Ottobrunn are focusing on German-French cooperation in matters related to the PAH-2 and on a relaxation of export restrictions on military equipment. In any case "additional layoffs will be unavoidable," admits Vogels.

Also, Dornier is awaiting firm requirements for the 1990's fighter contract from the contracting agency so that a team can be lined up.

The Dornier group has fared well in skirting the recession. In 1982 sales increased to DM 1.573 billion and profit held nearly constant at DM 36.2 million. The work force numbered 8,656 at year's end, 71 more than at the end of 1981.

In aircraft construction the commercial fraction has increased from 10 percent to almost a third as military contracts have dwindled. The failure of a follow-on contract for the Alpha Jet to materialize is causing a problem for management in maintaining the work force in the military development area. Nonetheless, it has been possible to date to use the released factors of production in other areas such as space projects. Also areas such as medical technology and machine building have been developing favorably, enabling management to remain optimistic in spite of a DM-200-million drop in the contract backlog to DM 1.5 billion.

The annual report of the third German billion-mark aircraft company radiated satisfaction: with an increase of 11.7 percent last year, MTU reached a sales volume of DM 1.014 billion.

Not a small factor in this is the RB 199 engine for the Tornado, which registered a 12.8 percent sales growth and sales of DM 452.0 million. Of total sales, 15.2 percent is attributed to engine components for commercial aviation. Also, contract bookings stood at DM 1.16 billion in 1982, clearly higher than the DM 442.5 million of 1981. At year's end the order backlog amounted to DM 1.5 billion. MTU is hoping for more commercial business in the future: with 4 partners, the company is developing a new engine for a future 150-seat airliner.

9160
CSO: 3698/443

BRIEFS

NEW SUBSTANCES FOR AIRBUS INTERIOR--Laupheim--At the MBB Laupheim factory an important milestone was reached with the achievement of production maturity for A310 components. In this factory which specializes in plastics processing many of the interior furnishings for the Airbus program are manufactured. Parts for the A310 include cabin air conditioning ducts, wall coverings, hat-rack doors and door and door frame finishings. Within the scope of the "Design Improvement II Program," all components were converted to new materials in accordance with ATS 1000. For the A310 phenolic resin prepregs will be used exclusively for extremely light sandwich components. After overcoming initial fabrication problems, production maturity of this manufacturing method has been achieved. Tube-form parts are produced by pure vacuum-press technology. For this, a new type of pass-through curing oven with integrated material flow was set up. Further innovations in connection with A310 components include water-jet cutting and the application of decorative foils to sandwich substrates. During this period, equipment for several A310 production machines was delivered: air conditioning units for factory numbers up to N 217 and interiors for numbers up to N 224. [Text] [Munich-Ottobrunn MBB AKTUELL in German Jan 83 p 7] 9160

CSO: 3698/429 - END -